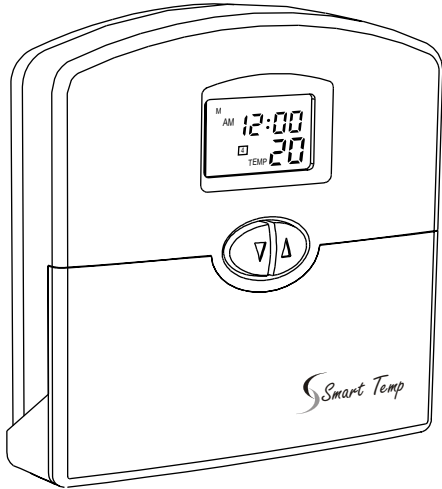# Smart Temp
### Thermostats

# Model 42 157
# Owners Manual

**Congratulations on the purchase of your new Electronic Thermostat!**

*Your new Smart Temp thermostat has been built using the best components and design philosophy. As a result, if properly installed your new electronic programmable thermostat will provide you with years of trouble free and reliable service.*

*The Smart Temp 42-157 has been designed to be attractive, highly reliable and simple to use. Please take the time to read these simple instruction to familiarise yourself with the function and features offered in this product.*

# Operation

Great effort has gone into making the Smart Temp electronic thermostat an extremely simple thermostat to program and use. By reading and understanding these simple instruction, you will realise and use many of the features this thermostat has to offer.

Programming and set up of this product has been designed as a very methodical procedure. The same buttons (and sequence of buttons) are used to program and set up this product.

## Setting The Clock

As the 42-157 thermostat is a programable thermostat, when you first place the batteries into the thermostat, (or after you have pressed the reset button) you must set the real time clock. This is essential as the 42-157 thermostat uses this clock to turn on the heating and cooling at the times that you request.

Setting the clock is a simple procedure that only requires a few key presses. When the batteries are first installed, the LCD will indicate the current room temperature and 12AM on the Clock as shown in Fig1.

In this example, lets set the clock for 2:16PM on Saturday.

**Step 1**
Press the DAY/TIME button, the display will illuminate, the temperature indication will go blank and the hours digits will flash as in fig 2.

**Step 2**
By pressing the ▽ or △ buttons adjust the hours to read 2PM.

**Step 3**
Press the DAY/TIME button again. Now the minutes flash. Pressing the ▽ or △ will permit you to adjust the minutes to "16".(Fig 3)

**Step 4**
Press the DAY/TIME button again. Now the day will flash as in fig 4. Press the ▽ or △ to adjust the day to read "SA".

**Step 5**
Press the DAY/TIME button again to return to normal mode. Alternatively by NOT pressing a button for 20 to 30 seconds the thermostat will automatically go back into normal mode. The clock is now set.

In this example, Pressing the DAY/TIME button cycles through Hours, Minutes and Day. (Indicated by the flashing digit). By pressing the ▽ or △ button permits you to make adjustments to the flashing digit. This same principal is used through out the programming of this thermostat.
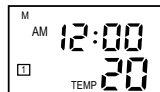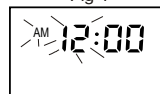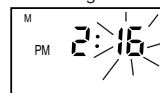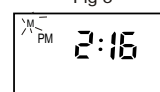
Fig 1

Fig 2

Fig 3

Fig 4

## Programming the Thermostat.

The 42-157 is a "5+2" day programmable thermostat; 1 program group is for the 5 weekdays, 1 program group is for the weekend, hence the 5+2. Further to this, the 42-157 has 4 programs per day. What this means is that up to 4 times each day the thermostat will change the temperature of the home.

As an example, in heating mode - just before you get out of bed in the morning you may want the home to heat to 20 Deg (*Program 1*). While you are at work you may not want the house to get any colder than 15 Deg (*Program 2*). Just before you arrive home at the end of the day you may wish the home to be at 21 deg (*Program 3*), and while you sleep at night you may want the home to be kept at a cosy 17 Deg (*Program 4*).

Programming this thermostat is no more difficult than setting the clock. In programming mode however the thermostat will cycle between Hours, Minutes and Temperature for Program 1. By continuing to press the program button it will continue to cycle through Hours, Minutes and Temperature for Program 2. Then Hours Minutes and Temperature for Program 3 etc.

Again, after 20 to 30 seconds of NOT pressing a button the thermostat will return to normal mode.

**Step 1**
Use the HEAT OFF COOL switch to select either heating mode or cooling mode.

*(Please note: This thermostat is capable of controlling both a Heating & Cooling system, The use of this thermostat does not indicate that your home or office has a Heating AND Cooling system installed)*

**Step 2**
Press the PROGRAM button. Program "1" indicator as well as the Weekdays will be displayed. The "HOURS" and AM or PM on the LCD will flash. (See fig 5) Press the ▽ or △ button to adjust the hour to the time you wish the first program to start.

FIG 5

**Step 3**
Press the PROGRAM button again. Now the minutes will flash for program "1". Press the ▽ or △ button to adjust the minutes to the time you wish the first program to start.
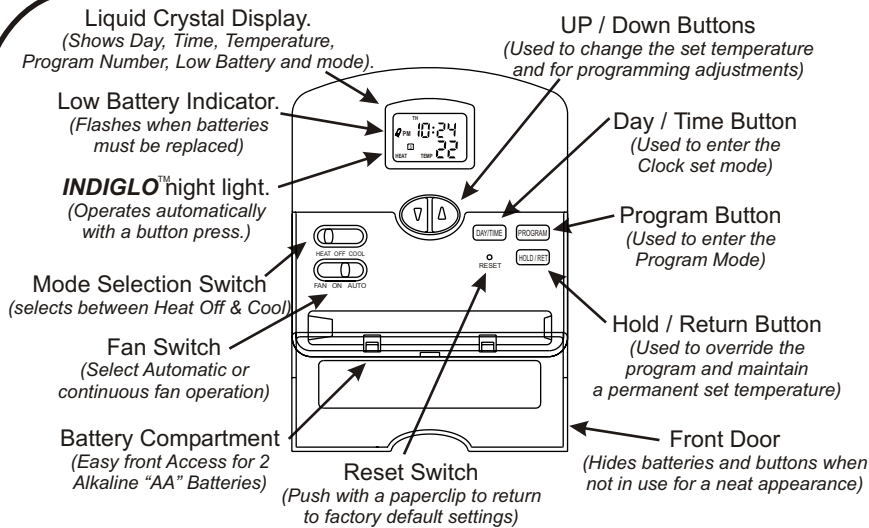
**Step 4**
Press the PROGRAM button again. Now the Temperature for program "1" will flash. Again, by pressing the ▽ or △ buttons you can adjust the desired temperature for program "1"

Pressing the program button again simply repeats the above procedure for Programs 2, 3 & 4 for the weekdays, then the 4 weekend programs (indicated by "SA SU" in the LCD).

**Tip.**
*If you only require 2 or 3 programs per day, simply set the unrequired programs to the same value as a used program. For example, should you only require 2 programs for the weekend (wake at 7:00am at 20 deg and Sleep at 11:00pm at 17Deg. Simply set program 1, 2 & 3 for 7:00 am at 20Deg and program 4 for 11:00pm at 17Deg. This way, at 7:00 the thermostat will move straight to program 3, and stay in program 3 until 11:00 pm (program 4 start time)*

*To adjust the Cooling program. Repeat the above procedure with the HEAT OFF COOL switch in the "Cool" position.*

## Diagram Labels

Liquid Crystal Display.
*(Shows Day, Time, Temperature, Program Number, Low Battery and mode).*

Low Battery Indicator.
*(Flashes when batteries must be replaced)*

**INDIGLO**™ night light.
*(Operates automatically with a button press.)*

Mode Selection Switch
*(selects between Heat Off & Cool)*

Fan Switch
*(Select Automatic or continuous fan operation)*

Battery Compartment
*(Easy front Access for 2 Alkaline "AA" Batteries)*

Reset Switch
*(Push with a paperclip to return to factory default settings)*

UP / Down Buttons
*(Used to change the set temperature and for programming adjustments)*

Day / Time Button
*(Used to enter the Clock set mode)*

Program Button
*(Used to enter the Program Mode)*

Hold / Return Button
*(Used to override the program and maintain a permanent set temperature)*

Front Door
*(Hides batteries and buttons when not in use for a neat appearance)*

## Default Program
Note: All seven days have the same values

| Program Number | Time | Temperature Deg C | |
| --- | --- | --- | --- |
| | | Heat | Cool |
| 1 | 6:00 AM | 20 C | 26 C |
| 2 | 8:00 AM | 16 C | 29 C |
| 3 | 4:00PM | 20 C | 26 C |
| 4 | 10:00 PM | 16 C | 28 C |

**Fill out this table below with your settings**

### Heat mode

| Day | Program 1 | Program 2 | Program 3 | Program 4 |
| --- | --- | --- | --- | --- |
| Monday to Friday | Time / Temp | Time / Temp | Time / Temp | Time / Temp |
| Saturday & Sunday | Time / Temp | Time / Temp | Time / Temp | Time / Temp |

### Cool mode

| Day | Program 1 | Program 2 | Program 3 | Program 4 |
| --- | --- | --- | --- | --- |
| Monday to Friday | Time / Temp | Time / Temp | Time / Temp | Time / Temp |
| Saturday & Sunday | Time / Temp | Time / Temp | Time / Temp | Time / Temp |

# Override Functions

The Smart Temp 42-157 has two override modes. These are very useful should you wish to make changes to the set temperature without reprogramming the thermostat. The two override modes are described below.

## Temporary Override

In this mode, the override temperature change will only last until the NEXT program starts, hence it being called a "temporary override." For example, you might use this type of override when you want the home to be a little warmer (or cooler) to accommodate a dinner guest. Adjusting the evening program (program 3) will only last until the sleep program (program 4) begins later that night, or until it is manually canceled as described below.

### To make a Temporary Temperature Override.
Press and hold the ▽ or △ button to change the LCD display to indicate the "SET" or desired temperature. After approximately 1 second, the display will blink once to indicate the temperature can be adjusted. Press and hold ▽ or △ to adjust the set temperature to your new desired temperature. You will note that the Program indicator in the LCD will now flash to indicate that a temperature override is now active.

## Permanent Override.

The Smart Temp 42-157 permits the permanent override of all temperatures and programs with a simple button press. This may be useful when you go on holidays and not wish to let the home cool below at 12 deg C, 24 hours per day, 7 days per week. Another common use of the permanent override is for those that may not wish to use the Smart Temp 42-157 thermostat as a programable thermostat, and use it in a "manual thermostat mode", In this way you can select a desired permanent temperature and by using the HEAT OFF COOL switch turn the thermostat off or on manually as desired.

### To make a permanent Temperature Override.
Should you wish to set a permanent temperature and override all program and clock functions first select heating or cooling mode using the HEAT OFF COOL switch. Next, using the ▽ or △ buttons select the desired temperature. To lock this temperature permanently simply press the HOLD/RET button. The thermostat will indicate "HOLD" in the LCD confirming the permanently hold function is active. It is then a simple matter to turn the thermostat off and on at the held temperature using the HEAT OFF COOL switch.

### To turn OFF Temperature Overrides
When you no longer require a permanent temperature override and wish to resume normal time clock functions, programs and temperature set points, simply press the HOLD/RET button. The "HOLD" symbol will no longer be shown in the LCD indicating normal thermostat functions have been resumed.

To turn off a temporary override simply press the HOLD/RET button twice.

*Making Life Comfortable*

# Additional Information

**Low Battery Warning**
The Smart Temp 42-157 is fitted with a two stage low battery warning. When the batteries are first detected to be weak the first stage Low battery warning will be indicated by the low battery symbol in the LCD. It is important to replace the batteries with Alkaline "AA" batteries when this symbol is flashing.
When the batteries become too weak to maintain normal thermostat operation the thermostat enters the second stage low battery warning which shuts the thermostat down and flashes the word "BATT" in the thermostat display.
During a battery replacement You have approximately 1 to 2 minutes once the batteries are removed to place fresh alkaline batteries in the thermostat before program data is lost.

**Please note: the back light function is suspended when the low battery indicator is on.**

**12 or 24 Hour Clock**
This thermostat is able to display the time in the conventional 12 hour "AM / PM" or the 24 Hour time format. To change the time format press the DAY/TIME button then the PROGRAM button to toggle between both time formats.

**Span Mode**
Your thermostat is set at the factory to maintain the room temperature to within ½ deg C of the set (or desired) temperature. For example, in heat mode if the set temperature is 20 Deg C. The 42-157 will turn the heating on at 19.5 deg C and off again at 20.5 deg. This setting has been chosen as it provides the most comfortable environment under most conditions. However, if you find the system cycling (turning off and on) to quickly or slowly, the thermostats cycle rate can be increased or decreased with the "Span" setting.

*Fig 6*

To enter the "Span" adjustment mode press both the ▽ △ buttons together for 5 seconds. The display will indicate the factory default "Span 2". (Fig 6)
By pressing the ▽ △ buttons will increase or decrease the span setting.
Span 2 is the factory default setting. Span 1 decreases the cycle rate, Span 3 increases the cycle rate.
The Span setting effects both the heat and cool mode equally.

To exit the Span mode, simply press and hold both The ▽ △ buttons for 5 seconds.

**LCD Back light ( *INDIGLO˚* )**

This thermostat is fitted with a electroluminescent lamp which activates for easy viewing in the dark. When any button or switch is pressed the display is illuminated. This back light will remain on for 5 seconds after the last button is pressed.

**Please note:**
**If the thermostat is in a low battery condition, the back light will not operate. It is important to replace the batteries with two new "AA" Alkaline batteries when a low battery condition exists.**

If the ambient noise level is very low, a quite high pitched sound may be heard when the back light is on. This is a normal sound made by the thermostat when the back light is on and is not a malfunction.

**Error Messages**

If the thermostat is unable to control your system due to an unexpected problem the 42-157 thermostat will enter "Error mode". In this condition the thermostat flashed "Err" on the LCD (fig7).

Err
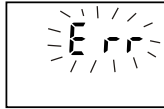
*Fig 7*

In the extremely unlikely event that your thermostat enters this mode it is recommended that you immediately replace the thermostat batteries with a new set of "AA" Alkaline batteries (even if you have just replaced the batteries).

Next, using a paperclip press the reset button which can be found directly under the DAY/TIME button. You will now need to set the clock and re program the thermostat to ensure correct thermostat operation.

## Troubleshooting

**No Display.**
> 1. Check batteries.
> 2. Press reset and reprogram.

**Display Dims.**
> 1. Replace Batteries.

**No Back light**
> 1. Replace Batteries.

**Program does not change at your desired Setting.**
> 1.Check the time is set properly, note the AM / PM indicator.
> 2.Check that the thermostat is NOT in Hold mode.
> 3.Check that the thermostat shows the    correct day.

**Heating or Cooling does not go On or OFF.**
> 1.Check that the function switch is in the correct position.
> 2.Some systems require a delay between switching modes.
> 3.Check circuit breakers (fuses) to equipment.
> 4.Make sure pilot light (if applicable) on furnace is lit.
> 5.Replace Batteries in thermostat.

**Erratic Display.**
> 1.Replace batteries.

**Thermostat permanently displays "HI", "LO" or "Err".**
> 1. Replace Batteries and reset.
> 2. Replace thermostat.

---

# Also Available from Smart Temp
## The *Smart Zone*
### Climate System Zoning Solution

**Each zone controls the system independently.**
*The Smart Zone will call for heating or cooling, regardless of the other zones requirements. This is almost like having two separate systems. (Note, Both heating & cooling can't run at the same time,)*

**Each Zone has its own timer, sensor and set temperature.**
*Because the Smart Zone is like two separate systems, the temperature is measured in the zone being heated or cooled. Further, each zone has its own time clock, therefore automatically turning on the heating or cooling when you have programmed it!*

**Divide your home into Living and Sleeping Zones.**
*Using the Smart Zone you are able to heat or cool the living zones during the day, and the sleeping zones during the night. Save energy by only heating or cooling the zones your occupying.*

**Have two separate temperature Zones**
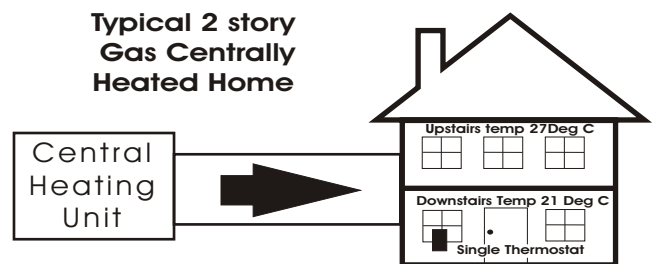*As the Smart Zone is like having two completely independent heating or cooling systems, each zone can set separate comfort levels. Therefore eliminating the problem of the upstairs overheating while maintaining a comfortable temperature downstairs.*
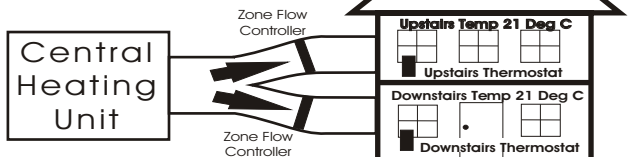
**Ideal for Shared accommodation.**
*If you have a family member living with you, by zoning their area of the home they have control over their comfort level while leaving your settings unaffected. This also saves on energy costs as you only heat or cool the occupied area of the home.*

## A home climate zoning system can reduce energy costs by up to 50% while improving home comfort.

### An example of what the system does

**Typical 2 story Gas Centrally Heated Home**

Central Heating Unit

Upstairs temp 27Deg C

Downstairs Temp 21 Deg C

Single Thermostat

**Zoned Gas Centrally Heated home.**

Central Heating Unit

Zone Flow Controller

Upstairs Temp 21 Deg C

Upstairs Thermostat

Downstairs Temp 21 Deg C

Downstairs Thermostat

Zone Flow Controller

The *Smart Zone* control board maintains the correct temperature in the zoned home by controlling the gas central heating unit and opening or closing the appropriate flow control damper(s) to the zone(s) that require heating.
This ensures the correct temperature is maintained throughout your entire home.

# Installation Instructions

The Smart Temp 42-157 thermostat has been designed to switch 24volt appliances only. Should you wish to control mains, 240VAC equipment an optional Smart Pak (P/N SP - 03) interface will be required. Please contact your place of purchase or Smart Temp Australia should this interface be required.

The Smart Temp 42-157 is a battery powered thermostat and does NOT require the use of a neutral. If this thermostat is replacing an existing line powered thermostat, disregard the neutral wire.
Failure to heed this warning WILL result in thermostat damage.

Remove the wall plate from the rear of the thermostat by pressing the release tab on the base of the thermostat. (Fig 8)
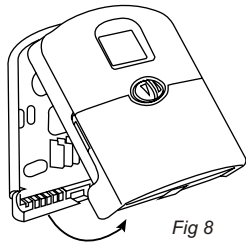
Position the wall plate on the wall and pull the wires through the large opening. Mount the wall plate with the supplied wall anchors or other suitable means, ensure the thermostat base is level to add to the appearance of the installation.

*Fig 8*

Referring to the supplied wiring diagrams, connect the system wires to the appropriate terminals on the thermostat base plate. Ensure the screws are tightened securely to prevent potential future problems caused by loose connections. Push excessive wire length back into the wall cavity.

If the opening in the wall is large there may be a potential for a draft to blow through the wall cavity and onto the temperature sensor on the back of the thermostat. To ensure correct thermostat operation it is important to block this hole. Failure to do so may cause inaccurate or erratic system performance.

On the back of the 42-157 thermostat there are three clearly marked selector switches. These switches are used to select the temperature display format (deg C or deg F), the type of system the thermostat is controlling (heat pump or heat with add on cool) and whether the fan is called by the thermostat (HE) or by the system (HG)
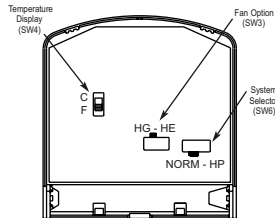
These switch locations are shown in Fig 9. Adjust these switches to their correct position.

*Fig 9*

Snap the two halves of the thermostat back together taking particular care to align the thermostat pins with the clips on the base plate of the thermostat (Fig 10).
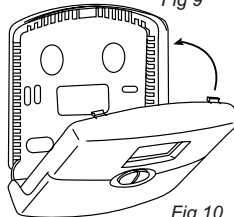
Set the thermostat to display the correct time and day taking particular care with the AM / PM and the day of the week. Ascertain the customers requirement and program the thermostat to the customers settings.

*Fig 10*

Test all thermostat modes by both raising the set temperature above the ambient temperature in heat mode and verifying correct heater operation. Next lower the set temperature to below the ambient temperature with the thermostat in Cool mode verify the correct operation of the equipment.

**Leave a copy of these instructions for the future users of this thermostat**

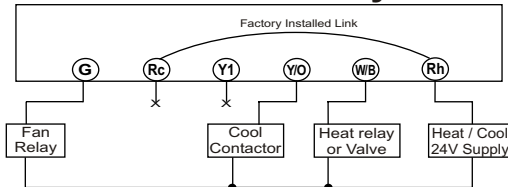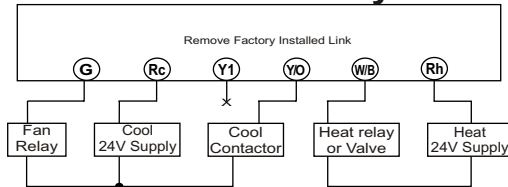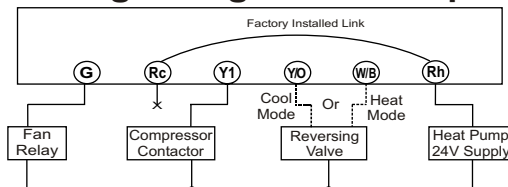Should you have any questions or require any technical advice please call Smart Temp Australia P/L on (03) 9899 6455 during normal business hours.

## 4 Wire Heat/Cool System

Factory Installed Link

G | Rc | Y1 | Y/O | W/B | Rh

Fan Relay | Cool Contactor | Heat relay or Valve | Heat / Cool 24V Supply

System Selector — STD HP

## 5 Wire Heat/Cool System

Remove Factory Installed Link

G | Rc | Y1 | Y/O | W/B | Rh

Fan Relay | Cool 24V Supply | Cool Contactor | Heat relay or Valve | Heat 24V Supply

System Selector — STD HP

## Single Stage Heat Pump

Factory Installed Link

G | Rc | Y1 | Y/O | W/B | Rh

Cool Mode — Or — Heat Mode

Fan Relay | Compressor Contactor | Reversing Valve | Heat Pump 24V Supply

System Selector — STD HP

## 2 wire Heat only system

Factory Installed Link

G | Rc | Y1 | Y/O | W/B | Rh

Heat relay or Valve | Heat 24V or Mimilivolt Supply

System Selector — STD HP

## 3 wire Heat only system

Factory Installed Link

G | Rc | Y1 | Y/O | W/B | Rh

Fan Relay | Heat relay or Valve | Heat 24V Supply

System Selector — STD HP

## 3 wire Cool only system

Factory Installed Link

G | Rc | Y1 | Y/O | W/B | Rh

Fan Relay | Cool 24V Supply | Cool Contactor
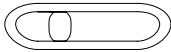
System Selector — STD HP

*Smart Temp Australia Pty Ltd*
*19 Indra Road Blackburn South 3130*
*Phone:(03) 9899 6455 Fax (03) 9899 6454*
*www.smart-temp.com.au*

Smart Temp Thermostat ™

# Manual Operation of the Thermostat
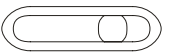
**Move Slide switch to heat position**

**Do you want to Heat or Cool?**

Heat ← → Cool
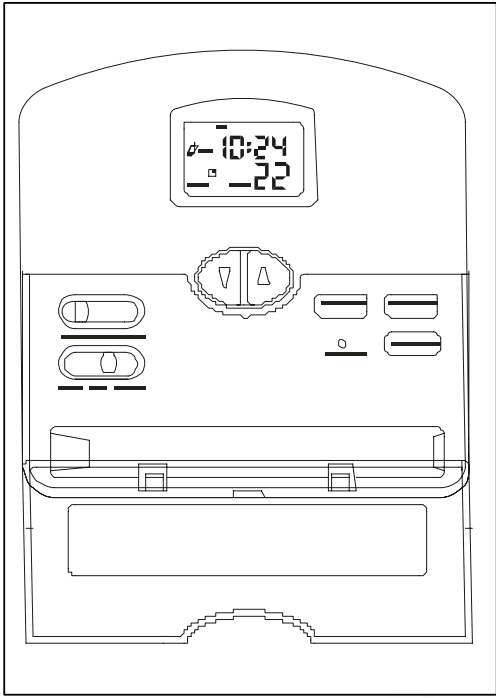
**Move Slide switch to Cool position**

**Press and hold the up button**

Set the desired temperature

*There will be two temperatures shown on the display - The top one is the set temperature and the bottom is the room temperature*

**Press and hold the down button**

Set the desired temperature

*There will be two temperatures shown on the display- The top one is the set temperature and the bottom is the room temperature*

Display: 10:24  22

**Press the hold button twice.**

HOLD/RET

"Hold" will be displayed on the screen

**Press the hold button twice.**

HOLD/RET

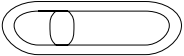"Hold" will be displayed on the screen

*This will hold the temperature indefinately until the thermostat reasches it's temperature, is turned off or if the "hold/ret" button is pressed (this will resume to the programming)*

| Typical Programs(Monday - Friday) | | 1 | Heat | Cool | 2 | Heat | Cool | 3 | Heat | Cool | 4 | Heat | Cool |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | Default Program | 6:00am | 20 | 26 | 8:00am | 16 | 29 | 4:00pm | 20 | 26 | 10:00pm | 16 | 28 |
| b | Typical worker (9:00am - 5:00pm) | 6:30am | 21 | 23 | 8:00am | 7 | 26 | 5:00pm | 21 | 23 | 10:30pm | 7 | 35 |
| c | Home all day | 7:00am | 21 | 23 | 7:00am | 21 | 23 | 7:00am | 21 | 23 | 11:00pm | 15 | 35 |
| d | Always off(used in override function o | 6:00am | 7 | 35 | 8:00am | 7 | 35 | 4:00pm | 7 | 35 | 10:00pm | 7 | 35 |

| Typical Programs(Monday - Friday) | | 1 | Heat | Cool | 2 | Heat | Cool | 3 | Heat | Cool | 4 | Heat | Cool |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| a | Default Program | 6:00am | 20 | 26 | 8:00am | 16 | 29 | 4:00pm | 20 | 26 | 10:00pm | 16 | 28 |
| b | Typical worker | 9:00am | 21 | 23 | 11:30am | 18 | 26 | 5:00pm | 21 | 23 | 11:00pm | 7 | 35 |
| c | Home All Day | 8:00am | 21 | 23 | 8:00am | 21 | 23 | 8:00am | 21 | 23 | 11:00pm | 15 | 35 |
| d | Always off(used in override function o | 6:00am | 7 | 35 | 8:00am | 7 | 35 | 4:00pm | 7 | 35 | 10:00pm | 7 | 35 |

**Smart Temp** ™
Australia

## Programming the Thermostat

Do you want to program **Heat** or **Cool**?

**Heat** →

Move Slide switch to heat position

**Cool** →

Move Slide switch to Cool position

*The number* **1** *should appear in the bottom left hand corner*

---

### Heat path

Press the button labeled

**PROGRAM**

The Hour should be flashing

Adjust the hour by pressing the up/down buttons

*If no changes are required jump to next step*

Press **PROGRAM** again

The Minutes should be flashing

Adjust the minutes by pressing the up/down buttons

Press **PROGRAM** again

The Temperature should be flashing
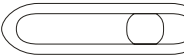
Adjust the temperature by pressing the up/down buttons

Program 1 has now been programmed. Repeat steps for remainding programs 2,3 & 4 and for Saturday and Sunday

---

### Cool path

Press the button labeled

**PROGRAM**

The Hour should be flashing

Adjust the hour by pressing the up/down buttons

*If no changes are required jump to next step*

Press **PROGRAM** again

The Minutes should be flashing

Adjust the minutes by pressing the up/down buttons

Press **PROGRAM** again

The Temperature should be flashing

Adjust the temperature by pressing the up/down buttons

Program 1 has now been programmed. Repeat steps for remainding programs 2,3 & 4 and for Saturday and Sunday

---

10:24
22